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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of:	)	
	)	
Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992	)	ET Docket No. 93-7
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	

REPLY COMMENTS OF

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Date: April 21, 1993

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SUMMARY

Although the 1992 Cable Act specifically requires the cable industry and consumer electronics industry to work together to improve the compatibility of consumer electronics equipment with cable television systems, the consumer electronics industry seeks to place the burden of meeting these compatibility requirements entirely on the cable television industry. Under the guise of standardization, the consumer electronics industry would have the FCC impose a freeze on channel capacity and a moratorium on the provision of new services and digital technology until the hardware for utilizing these services and technologies could be standardized and incorporated into their products.

The self-serving attempt by the consumer electronics industry to shirk their fair share of the burden of achieving compatibility must be rejected. The consumer electronics industry is responsible for much of the subscriber dissatisfaction over equipment incompatibility by marketing televisions and VCRs as "cable ready" as a means to sell equipment with more expensive electronic tuners, even though that equipment was not designed to meet shielding, overload, channel capacity and other technical parameters for true compatibility

sides, the compatibility goals of the 1992 Cable Act will not be accomplished.

The consumer electronics industry's proposal to cap the number of channels that can be offered by cable systems or place a moratorium on new services comes at a time when numerous technologies are converging to create a video and communications revolution that will have a tremendous impact on every aspect of daily life and culture. A number of recently announced innovative experiments implementing this technology convergence on cable systems will not come to fruition if channel capacity were frozen or if restrictions on the use of channels and technologies or provision of new services were imposed by the FCC. In all cases, technology or service moratoriums would limit subscriber access to ideas, information, programming and artistic expression. Experimentation and technological developments should be encouraged and not stifled merely to advance the economic interest of equipment manufacturers whose products are designed to a standard that may well become obsolete in the 21st century.

Similarly, the Commission should not mandate the use of any particular signal security technology. Even manufacturers of the technologies advocated by the consumer electronics industry acknowledge that their products should be voluntarily implemented and are not appropriate in all circumstances. The choice of the proper technology to use in any given circumstance will be based on cost effectiveness, cost allocation, flexibility to

accommodate changing legal requirements and compatibility with newly emerging technologies such as multichannel impulse pay-per-view, near video on demand, multimedia and interactive television, just to name a few. The need for such flexibility

to undertake a cooperative effort to educate consumers in making intelligent equipment purchases and in the proper setup and

compatible with cable use. It will also ensure that subscribers who wish to spend the money for a "cable ready" product get their money's worth.

Finally, the Commission should not require descrambling equipment to be made available on a commercial basis or implement a national scrambling standard that will allow decoding circuitry to be built into newly manufactured TVs and VCRs. The commercial availability of either component or integrated descramblers would threaten signal security, make it more difficult to successfully prosecute signal pirates and would preclude inexpensive modifications to an existing security system which had been breached. Ultimately, in cases where system security is breached, subscribers would face the prospect of having their investment in decoder equipment negated and of having to pay the full cost of replacing a security system which could have otherwise been inexpensively modified to cure the breach. Given the fact that the Commission's recently adopted rate regulations will require cable equipment to be unbundled from cable service and to be offered on a basis of actual cost to consumers, there is very little, if any, benefit to be gained by requiring the commercial availability of descrambling equipment that could offset the very real and substantial threat to signal security that such commercial availability would pose.

In seeking to balance the competing concerns in this proceeding, the Commission must not fail to give due attention to the importance of protecting the copyrights of artists. Without

artists, there is no programming. Without programming, there are no customers. Without customers, there is no cable business. And without a cable business, there is considerably less reason to buy a new TV or VCR. Any action which limits the diversity of programming is a disservice to consumers, a hazard to basic First Amendment freedoms and will ultimately work to the detriment of both industries.

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REPLY COMMENTS

Time Warner Entertainment Company, L.P. ("Time Warner"), by its attorneys, hereby respectfully replies to certain issues raised in the initial comments submitted in response to the Commission's Notice of Inquiry in ET Docket No. 93-7 ("NOI").[1]

In their initial comments, representatives of the consumer electronics industry have almost unanimously sought to place the burden of meeting the statutory mandate to improve compatibility between cable systems and consumer electronics equipment entirely on the cable television industry. For example, the Consumer Electronics Group of the Electronics Industry Association

[1]Apart from Time Warner's reply to the general issues raised in the initial comments of various parties, Appendix B attached hereto contains Time Warner's response to specific statements made by various commenters.

("CEG/EIA") argues that the main cause of compatibility problems is the lack of standards governing the characteristics of the signals delivered by the cable company to the consumer.[2] CEG/EIA argues that the number of channels delivered by cable systems should be standardized and that all cable operators be required to standardize their channel mapping procedures to allow for the incorporation of mapping capability into the TV or VCR.[3] The solution to the compatibility problem according to the consumer electronics industry is for cable television systems to simultaneously deliver all channels which a subscriber has purchased "in the clear" to the subscriber's television set.[4] Specifically, these commenters propose that the Commission prohibit the use of set top descramblers and mandate the use of traps, interdiction, and multichannel broadband descrambling as the only permissible means for cable systems to secure their

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[2]CEG/EIA Comments at pp. 6-9. See also Comments of National Electronics Service Dealers Association ("NESDA") at pp. 2-3.

[3]CEG/EIA Comments at pp. 16-17. See also Comments of Matsushita Electric Corp. of America ("Matsushita") at p. 11. A similar position is taken in the Comments submitted by Mitsubishi Electronics America, Inc. ("Mitsubishi") which argues that cable operators should not be permitted to use frequencies above 550 MHz for the delivery of analog services. Comments of Mitsubishi at p. 15.

[4]CEG/EIA Comments at p. 35; NESDA Comments at p. 4; Mitsubishi Comments at p. 7; Comments of Thomson Consumer Electronics ("Thomson") at p. 3; and Matsushita Comments at p. 12.

programming.[5] Time Warner requests the Commission to reject outright any proposal which would place the onus of ensuring equipment compatibility entirely on the cable industry; which would stifle the development of the next generation of video services and hardware under the guise of standardization; which would mandate a particular signal security or prohibit the use of scrambling technology; or which would compromise signal security by mandating a national scrambling standard or the commercial availability of descrambling equipment. Each of these points will be discussed in turn.

A. THE BURDEN OF ACHIEVING COMPATIBILITY MUST BE BORN BY BOTH THE CABLE TELEVISION AND CONSUMER ELECTRONICS INDUSTRIES

The attempts by the consumer electronics industry to shift

some cable channels (at little or no additional cost) was consumer resistance to the additional cost of the electronic tuner overcome. However, because the "cable ready" feature of the extended tuner range was designed to sell electronic tuners rather than to make television sets more compatible with cable television systems, consumer anger and dissatisfaction inevitably arose when expectations did not conform to reality.[6] The consumer electronics industry can not be allowed to escape responsibility for solving a problem which they are at least partially responsible for creating.

on cable operators and television manufacturers. . . ."[8] Without the cooperation of both industries, compatibility will be impossible to accomplish and any attempt to place responsibility for ensuring compatibility entirely on one of the two affected industries will only guarantee failure.

B. THE COMMISSION MUST NOT STIFLE THE DEVELOPMENT OF NEW SERVICES AND TECHNOLOGIES UNDER THE RUBRIC OF PROMOTING COMPATIBILITY

The consumer electronics industry has advanced several proposals which would freeze the number of channels that could be offered by cable systems[9], would place a moratorium on new services[10] or would mandate a particular approach to signal security. If adopted by the Commission, these proposals would halt the video revolution in its tracks by stifling cable industry innovation and the development of exciting new services precisely at a time when the manner in which news, information and video entertainment programming is delivered and utilized is undergoing a momentous change. Time Warner's expansion of its Quantum experiment in Queens, New York; deployment of Time Warner's Full Service Network in Orlando, Florida; TCI's recently announced plans to deploy high-powered computer hardware into each of the 14 million homes it serves to allow the

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[8]47 U.S.C. § 544(c)(1)(A).

[9]Mitsubishi Comments at p. 15.

[10]Mitsubishi Comments at pp. 9, 15.

implementation of multi-media services over cable television;[11] and the development of "smart boxes" to allow for full implementation of interactive television recently announced by companies such as General Instrument and 3DO[12] will not come to fruition if channel capacity were frozen or if other restrictions on the use of channels and technologies or the provision of new services were imposed by the FCC. In all cases, technology or service moratoriums would limit subscriber access to ideas, information, programming, and artistic expression. Such limits are not consistent with the First Amendment rights of cable operators or cable subscribers. They are self-serving and poor public policy. Specific problems with proposals to limit channel capacity and place a moratorium digital technology are discussed below.

Limit upper channel: Some consumer electronics manufacturers call for an upper limit to the frequencies cable can utilize. This limit falls short of what technology will

sealed spectrum in their own cables for their own purposes. It is not right to limit it to less than it is capable of doing just so the suppliers of consumer hardware don't have to keep up with the advances in this technology.

Moratorium on Digital: There have been several calls for a moratorium on deployment of digital services on cable until there is a national standard. This self-serving proposal would only advance the special interests of the consumer electronics manufacturers. It certainly is not in the interest of cable subscribers who expect dramatic increases in choice because of digital video compression ("DVC").

It is much too early to create standards for DVC. When NTSC was created some fifty years ago, having a dozen vacuum tubes in a receiver was a major accomplishment. Very slowly over time, the number of "active devices" (originally tubes, then transistors) increased. Transistors greatly reduced the constraints on active devices. It became possible to have dozens of active devices in a TV. The analog integrated circuit made possible a few hundreds of transistors in a TV set. When digital techniques were introduced, the number increased to a few thousand. The road from a dozen to a few thousand active devices took around fifty years. In just the last five or so, the number of digital devices that can be employed in consumer products has exploded to a few million. We are now riding on the steep part of the technical progress curve.

The principal reason we can implement DVC now is because we can afford a million or two transistors in a cable provided decompression unit. The nature of digital electronics is that the number of transistors available at a given price approximately doubles every eighteen to twenty four months. This has been going on for several decades and appears to have at least one more decade to go. About ten years ago, the Intel 8086 microcomputer had 30,000 transistors on one piece of silicon. The Intel 80486 introduced a couple of years ago has 1,200,000 transistors. The recently introduced 80586, also called the "Pentium," has 3.1 million transistors. In roughly ten years the doubling every eighteen to twenty four months has held true. From this we can project dramatic future growth in computing power affordable in cable provided decompression boxes. If the experience of the last few decades extends one more decade, there will be about six and a half doublings of transistors. Today's million transistors will become around a hundred million in a decade. Any more conservative estimate still promises five to ten million transistors in five or six years. We can surely more effectively compress digital NTSC signals with five to ten million transistors than we can with just one million.

The DVC "standards" process sponsored by the international Motion Pictures Experts Group ("MPEG") has already created one standard, MPEG I. Before it experienced significant implementation, an MPEG II standards setting process was launched. It is likely that there will be an MPEG III, MPEG IV

and who knows how far it will go. The rich availability of millions of transistors at very affordable prices will make this progress possible.

At what point would a proposed moratorium be lifted? Would this moratorium apply to all video providers, or just be a handicap to cable operators and cable subscribers? If a standard was created and the DVC circuits were built into TVs and VCRs, how would subsequent advances be accommodated? What would keep cable subscribers from being frozen out at a lower level of digital technology?

Due to cable's controlled environment, it has less noise, less interference, less reflections than the broadcast environment. Because of this, it can put more digital information in 6 MHz than the broadcast spectrum will support. There is some inference in the filings made by consumer electronics groups that cable subscribers should be prevented from access to this capacity because it may mean slightly different hardware for cable compared to broadcast. This kind of inefficiency and waste cannot be tolerated. It cannot serve the common good to limit full utilization of such an important national resource.

In its recently adopted Report and Order implementing the must-carry requirements of the 1992 Cable Act, the Commission rejected arguments by the broadcast industry and others to adopt additional technical standards for the delivery of television signals to cable subscribers stating that "additional regulations

in this area may have the unwanted effect of impeding technological advances and experimentation by the cable industry (e.g., signal compression and 500-channel technology)."[13] For the very same reason, the FCC should decline proposals by the consumer electronics industry to stifle technological development of cable services and equipment under the guise of promoting consumer equipment compatibility.

In a rapidly changing legal and technological environment, the choice of an appropriate signal security technology in a given situation must be based on a number of different factors. First, the technology of providing signal security must be cost effective so that it does not present economic barriers which prevent or discourage subscriber access to diverse programming. Thus, technologies such as broadband multichannel descrambling and signal interdiction, which are advocated by consumer electronic groups because they deliver a signal "in the clear" to the subscriber's television set, may not be appropriate where a large number of channels need to be controlled because of the fact that these channel incremental technologies require increased cost to be incurred with each additional channel that needs to be secured.

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[redacted]

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flexibility is not required and their limited cost make them an effective signal security technique.

Fourth, in cable systems which desire to experiment with or employ newly emerging technologies such as multichannel impulse pay-per-view, near video on demand, multimedia or interactive television, the technology employed for signal security must also be capable of supporting these new services. To date, the practical limitations of "in the clear" technologies such as interdiction, broadband descrambling and traps do not allow such newly emerging services to be offered without making compromises that diminish the attractiveness of the service to the consumer, if the service can be offered at all. In modern, high capacity cable systems offering or experimenting with new services requiring on-screen displays, forced tuning and a large number of secure channels, "in the clear" technologies, although compatible with certain existing consumer electronics equipment, may not be appropriate.[16]

These same concerns have been expressly acknowledged by the Commission. In its recent Report and Order implementing the tier buy-through prohibition contained in Section 3 of the 1992 Cable Act,[17] the Commission acknowledged the need for cable operators

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[16]It should also be noted that, as pointed out in Time Warner's initial comments, both broadband descrambling and interdiction technologies have not evolved to the point where they have demonstrated a level of reliability, flexibility and cost effectiveness which would be required of any industry standard.

[17]47 U.S.C. § 543(b)(8).

to have maximum flexibility in implementing new technologies, stating that:

> The need to comply with the regulatory policies incorporated in the 1992 Cable Act, including the mandatory signal carriage rules, the rate regulation provisions, and the equipment compatibility requirements, along with the benefits associated with the development of new programming services and potential technological developments, make it highly desirable that systems retain the flexibility to alter their channel configurations and signal access control mechanisms. Thus, we do not intend to mandate the continued use of any particular mode of operation. Indeed, systems are encouraged to continue to experiment and to improve service offerings to assure that they are "consumer friendly." In this regard, we are cognizant of situations where system operators have attempted to use technologies in the past, such as so-called pole line converters or signal interdiction taps, that might have facilitated the buy-through option but which were abandoned when rejected by consumers or found to be technically unsuitable. Thus, while systems that have the capacity to do so must comply with the buy-through requirements, changes made to improve customer service or comply with other regulatory mandates are neither precluded nor discouraged.[18]

Furthermore, the Commission specifically recognized that systems which were presently technically capable of complying with the buy-through requirement could reconfigure their systems in a manner that would prevent them from continuing to comply with that requirement where such system changes were "undertaken to

requirements, to improve the technical quality of service, to reduce cost and rates, or to offer service in a more consumer friendly fashion."[19] Thus, the Commission recognized that compliance with the various provisions of the 1992 Cable Act would require choices and compromises, and that cable systems should be given the maximum freedom to experiment with new technological approaches to accommodate the development of new services as well as the often conflicting statutory demands.

D. THE COMMISSION MUST NOT PROHIBIT OR UNDULY RESTRICT THE USE OF SCRAMBLING

Time Warner wishes to make absolutely clear that it does not oppose in any way the deployment of interdiction, traps or broadband descrambling technologies on a voluntary basis. However, Time Warner vigorously opposes the consumer electronics industry's proposal which would prohibit the use of other superior, reliable and flexible signal security approaches such as scrambling. As stated in Time Warner's initial comments, scrambling is currently by far the most effective and flexible signal security technique available today.[20] This is particularly important given the fact that each of the consumer electronic equipment functions identified by Congress as

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[19] Id. at ¶ 31.

[20] Initial Comments of Time Warner at p. 11. Indeed, this was the same conclusion reached by the City of New York as a result of its own independent investigation of scrambling and compatibility issues. See Comments of the City of New York at p. 4.

potential equipment compatibility problems can be accommodated on systems which employ scrambling through existing, readily available devices coupled with a consumer education program as directed by Congress, without requiring cable operators to compromise security. Furthermore, the combination of addressability and scrambling is currently the only practical security approach in most instances that allows for implementation of the tier buy-through requirements and the broadcast channel positioning provisions of the 1992 Cable Act, while at the same time able to accommodate the newly emerging services such as multichannel impulse pay-per-view and near video on demand which require the use of extensive features such as on screen displays and forced tuning in order to make these services

is simply not the case. As detailed in Time Warner's initial